



Brian J Sullivan • Sr Compliance Profession • Talen Montana, LLC
PO Box 38 • 580 Willow Ave • Colstrip, MT 59323
(406) 748-5038 • brian.sullivan@talenenergy.com

Received

APR 06 2026

Montana DEQ
Air Quality Bureau

March 30, 2026

Department of Environmental Quality
Permitting and Compliance Division
1520 E Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901

Re: Application for Certification of 2025 Air or Water Pollution Control Equipment (PCE)
Colstrip Steam Electric Station

To Whom it May Concern:

Please find enclosed t separate CAB-2 Forms, "Air and Water Pollution Control Equipment Application" and detail supporting the included capital costs for your consideration. You will find an application for each of the following pollution control projects at the Colstrip Steam Electric Station.

1. Colstrip Units 3 & 4 Water Pollution Control Projects
2. Colstrip Units 3 & 4 Air Pollution Control Projects

As in years past, pollution control certification is beneficial for the owners of the Colstrip Steam Electric Station given that MDEQ Guide Manual 9-1, *Tax Certification/Classification of Air Pollution Control Equipment*, is not available to class thirteen properties - specifically centrally assessed electric power company.

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. I certify that the statements and information are to the best of my knowledge and belief true, accurate and complete. This application is in substantial compliance with all rules, laws, orders, and permit conditions applicable to equipment described in ARM 17.80.102. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Please contact me at your earliest convenience, if you should have any questions or need additional information.

Sincerely,

A handwritten signature in blue ink that reads "Brian J. Sullivan".

Brian J. Sullivan

Ec:
Angie Nelson-Haller, Montana Department of Revenue
Rosebud County Commissioners
Talen / OnBase

Colstrip Steam Electric Station
Air or Water Pollution Control and Carbon Capture
Equipment Certification Application

Date March 26, 2026

Section A

Name Talen Montana
Mailing Address PO Box 38
Colstrip, MT 59323
Facility Address (if different from mailing address)
580 Willow Ave.
Colstrip MT 59323
Telephone (406)748-5055
Contact Name and Phone Brian J Sullivan (406) 748-5038

Section B

Please describe the nature of the operation conducted at the above location.

The Colstrip Power Plant operates two coal-fired generating units capable of producing a total of up to 1,610 gross megawatts (GMW) of electricity. Units 1 and 2 began commercial operation in 1975 and 1976 and were retired in 2020, and Units 3 and 4 started in 1984 and 1986. Units 1 and 2 were rated at 333 GMW of generating capacity. Units 3 and 4 are rated at 805 megawatts of generating capacity.

This PCE certification application deals only with air pollution control projects for Units 3&4.

Section C

1. Describe the process(es) whose emissions or discharges are or will be controlled by the facility.

Colstrip Units 3&4 utilize venturi scrubber equipment for the control of SO₂ and particulate emissions, oxidizer/PAC injection equipment for the control of Hg, and combustion equipment for control of NO_x in the effluent flue gas streams.

2. Complete the following tables as applicable.

AIR

Emission Rate (Tons per Year (tpy) and Pounds per Hour (lb/hr))			Control Efficiency	
Emission (Particulates, SO ₂ , NO _x , CO, VOC, Pb, CO ₂ , etc.)	With Facility*	Without Facility**	Design	Actual Performance
See Addendum C-3 for the	tpy	PM ~600,000 tpy	~99	~99.7%
	lb/hr	PM ~150,000 lb/hr		
2025 Emissions Inventory*	tpy	SO ₂ ~80,000 tpy	~95%	~95%
	lb/hr	SO ₂ ~20,000 lb/hr		

Notes: SO₂ – sulfur dioxide, NO_x – oxides of nitrogen, CO – carbon monoxide, VOC – volatile organic compounds, Pb – lead, CO₂ – carbon dioxide

* "With Facility" estimated Particulate and SO₂ emissions are based on Units 3&4 2024 emissions inventory data (submitted to MDEQ in February 2024). See Addendum C-3.

** "Without Facility", Uncontrolled particulate emissions are based on 2024 average % Ash from coal analyses, coal burned, and operational hours. Uncontrolled SO₂ emissions were estimated using EPA AP-42 emission factors from Table 1.1-3, % Sulfur from coal analyses coal burned, and operational hours. See uncontrolled emissions calculations in Addendum C-3.

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WATER–

Contaminant Discharge	With Facility		Without Facility	
	Average Monthly Concentration (mg/L)	Average Monthly Flow (MGD)	Average Monthly Concentration (mg/L)	Average Monthly Flow (MGD)
Not Applicable***				

Notes: mg/L – milligrams per liter, MGD – Million Gallons per Day

*** Colstrip is a zero-discharge facility. It does not have a discharge permit.

3. Describe the method or technique used to estimate the rate of emissions or discharges (please attach all calculations).

Continuous Emission Monitors (CEMS) are used to measure NO_x, CO₂, SO₂ and opacity missions. Annual particulate compliance tests are used to measure particulate emissions. See Addendum C-3 for the 2025 Emissions Inventory.

Section D

1. List the type and description of air or water pollution control facility for which certification is desired.

Below is the category of pollution control projects. The projects are related to the replacement of components in the Unit 3 CEMS systems. These included replacement of Talen's NO_x, SO₂, CO₂ CEMS analyzers, plus the opacity analyzer in Unit 3.

Description of projects:

- A. CEMS Monitor Replacement Unit 3 - This project provided for more accurate, reliable CEMS emissions monitoring by replacing the analyzers for NO_x, SO₂ and CO₂ at Colstrip Unit 3. Accurate continuous CEMS monitoring allows the plant to take corrective action immediately to help prevent a non-compliance situation with the CEMS emission limit and complete required annual compliance testing.*
- B. Opacity Monitor Replacement Unit 3 - This project provided for more accurate, reliable opacity monitoring at Colstrip Unit 3 by upgrading to a new analyzer. Accurate continuous opacity monitoring allows the plant to take corrective action immediately to help prevent a non-compliance situation with the opacity limit.*
- C. Separate Over Fire Air Bucket Replacement Unit 3 – This project replaces the tips of the Separate Over Fire Air Buckets (SOFA), an essential component for the control of NO_x and opacity. The tips warp over time due to heat exposure.*
- D. Top Over Fire Air Bucket Replacement Unit 3 - This project replaces the tips of the Top Over Fire Air Buckets (TOFA), an essential component for the control of NO_x and opacity. The tips warp over time due to heat exposure.*

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E. Boiler Bucket Burner and Aux Air Replacement Unit 3 - This project replaces the coal nozzles, burner tips and aux air tips to maintain NO_x, CO and opacity control. The tips warp over time due to heat exposure.

2. Describe the purpose of each piece of equipment installed (for which certification is being sought), including the reason for installing the equipment.

See #1 above.

3. Mark the category for each piece of equipment installed (for which certification is being sought).



Replacement Equipment

- A. CEMS Monitor Replacement Unit 3
- B. Opacity Monitor Replacement Unit 3



Maintenance of Existing Equipment



Repair of Existing Equipment

- C. Separate Over Fire Air Bucket Replacement
- D. Top Over Fire Air Bucket Replacement
- E. Boiler Bucket Burner and Aux Air Replacement



Enhancement of Existing Equipment



New Equipment

4. Provide the maintenance schedule and activity for the facility (i.e., downtime, percent of utilization, etc.) for each facility under consideration for certification.

The projects are operated 100% of the time when Colstrip Units are operating.

5. Describe the final disposition of pollutants or contaminants for each facility under consideration for certification.

The final disposition of air emissions captured from the scrubbers is in the form of a slurry conveyed from the scrubbers to the final disposal impoundments where it is dewatered prior to final placement.

6. What is the date that for each facility under consideration for certification was placed (or is expected to be placed) in operation/service?

See response to #10 below.

7. What is the useful operating life of for each facility under consideration for certification?

The useful life of these projects is expected to be the life of the plant.

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8. Does (or when completed, will) for each facility under consideration for certification conform to water and air pollution control requirements or standards?

Yes, these projects are needed for the facility to conform to the emission limitations as required in the Title V Operating Permit 0513-19.

9. For equipment that is used for multiple purposes, provide a detailed breakdown (by percentage) of the use of the equipment (ARM 17.8.102). The information should differentiate the extent to which the equipment is used for pollution control or carbon capture purposes as compared to other purposes.

All Projects are used 100% for the singular purpose of pollution control. The Unit 3 CEMS (NOx, SO2, CO2)/Opacity analyzers are specifically for air emissions monitoring to comply with permit limitations. The SOFA, TOFA and Boiler Burner Buckets projects for part of the SmartBurn NOx control system.

10. Provide a detailed itemization of capital and operating costs for each piece of equipment under consideration for certification in this application (ARM 17.80.103(5) and ARM 17.8.103(6)).

Project #	Project Total	Unit 3&4 Air Pollution Control Equipment Projects Descriptions
A. CEMS Monitor Replacement – Unit 3		
10028450	\$ 216,626	This project provided for a more accurate, reliable NOx, SO2 and CO2 emissions monitoring at Colstrip Unit 3. Accurate continuous monitoring allows the plant to take corrective action immediately to help prevent a non-compliance situation with the permitted emission limits.
B. Opacity Monitor Replacement – Unit 3		
10028451	\$ 68,526	This project provided for a more accurate, reliable opacity emissions monitoring at Colstrip Unit 3 by upgrading the system with a new analyzer. Accurate continuous monitoring allows the plant to take corrective action immediately to help prevent a non-compliance situation with the permitted emission limit.
C. Separate Over Fire Air Bucket Replacement – Unit 3		
10028264	\$ 153,877	This project replaces the tips of the Separate Over Fire Air Buckets (SOFA), an essential component for the control of NOx and opacity. The tips warp over time due to heat exposure.
D. Top Over Fire Air Bucket Replacement – Unit 3		
10028265	\$ 132,500	This project replaces the tips of the Top Over Fire Air Buckets (TOFA), an essential component for the control of NOx and opacity. The tips warp over time due to heat exposure.
E. Boiler Bucket Burner and Aux Air Replacement – Unit 3		
10028250	\$ 1,604,364	This project replaces the boiler nozzles, burner tips and aux air tips to maintain NOx, CO and opacity control. The tips warp over time due to heat exposure.
PCE Total	\$ 2,175,893	

Operating costs: Approximate operating costs (O&M) for the Units 3 CEMS (NOx, SO2, CO2) analyzers pollution control equipment are approximately \$126,529/yr. or \$10,544/month

Operating costs: Approximate operating costs (O&M) for the Units 3 Opacity analyzer pollution

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control equipment are approximately \$42,176/yr. or \$3,515/month

Operating costs: Approximate operating costs (O&M) for the Units 3 SOFA Air Bucket replacement pollution control equipment are approximately \$17,600/yr. or \$1,467/month

Operating costs: Approximate operating costs (O&M) for the Units 3 TOFA Air Bucket replacement pollution control equipment are approximately \$17,600/yr. or \$1,467/month

Operating costs: Approximate operating costs (O&M) for the Units 3 Boiler Burner Bucket and Aux Air replacement pollution control equipment are approximately \$17,600/yr. or \$1,467/month

11. Attach a copy of plans, specifications and drawings of the facility for which certification is desired. Include the cost of the facility and operating cost per month.
Drawings and/or photos are attached for PCE projects A and B in Addendum D-11.

Colstrip Unit 3&4 Air Pollution Control Equipment Capital Costs				
Project Name	% used for Pollution Control	Cost of installation of new PCE	Cost of improvement to existing PCE	Initial In-Service Date
A. CEMS Monitor Unit 3	100	\$ 216,626	-	12/10/25
B. Opacity Monitor Replacement – Unit 3	100	\$ 68,526	-	8/29/25
C. Separate Over Fire Air Bucket Replacement – Unit 3	100	-	\$ 153,877	6/13/25
D. Top Over Fire Air Bucket Replacement – Unit 3	100	-	\$ 132,500	6/9/25
E. Boiler Bucket Burner and Aux Air Replacement – Unit 3	100	-	\$ 1,604,364	6/19/25
	Sub-Total	\$ 285,152	\$ 1,890,741	
	Total	\$ 2,175,893		

Operating costs: Approximate operating costs (O&M) for the Units 3 CEMS (NOx, SO2, CO2) analyzers pollution control equipment are approximately \$126,529/yr. or \$10,544/month

Operating costs: Approximate operating costs (O&M) for the Units 3 Opacity analyzer pollution control equipment are approximately \$42,176/yr. or \$3,515/month

Operating costs: Approximate operating costs (O&M) for the Units 3 SOFA Air Bucket replacement pollution control equipment are approximately \$17,600/yr. or \$1,467/month

Operating costs: Approximate operating costs (O&M) for the Units 3 TOFA Air Bucket replacement pollution control equipment are approximately \$17,600/yr. or \$1,467/month

Operating costs: Approximate operating costs (O&M) for the Units 3 Boiler Burner Bucket and Aux Air replacement pollution control equipment are approximately \$17,600/yr. or \$1,467/month

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12. I certify that, on the date of this application, my company is in substantial compliance with all rules, laws, orders and permit conditions applicable to the equipment that is the subject of this certification application.

Section E

Certification

I hereby certify that I have read the contents of the foregoing application and know the contents thereof, and that the same are true and complete to the best of my knowledge, information and belief.


Applicant Signature

Section F

For Agency Use Only

File Number _____

Application and supporting data reviewed by _____

Recommendation _____

Mail a completed application to each of the following addresses:

Montana Department of Environmental Quality
Permitting and Compliance Division
1520 E Sixth Avenue
PO Box 200901
Helena, MT 59620-0901

Montana Department of Revenue
Business Tax and Valuation Bureau
PO Box 5805
Helena, MT 59604-5805

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Addendum C-3
2025 CSES Emissions Inventory
And Estimated Uncontrolled Emissions Calculations

EMISSION INVENTORY DETAIL
DEQ Air Resources Management Bureau
Year of Emissions: 2025

Print Date: 2/16/2026

Airs Number: 087-0008

COLSTRIP STEAM ELECTRIC STATION

Plant Location

TALEN MONTANA LLC
PO BOX 38580 WILLOW AVE
COLSTRIP, MT 59323

SIC/NAIC

4911 - Electric Services
221112 - Fossil Fuel Electric Power Generation

Emissions Contact

DAVE MILLEGAN

, MT

E-mail Address

DAVID.MILLEGAN@TALENENERGY.COM

Plant Comment

UPDATED BY: ADAM BRADLEY ENTERED BY: JAMIN GRANTHAM

Airs Number **Year of Inventory**

087-0008 2025

Pollutant **Emissions (tons)**

CO 1438.9875

NH3 0.1609

NO2 6708.7062

PB 0.2442

PM10-FIL 297.2463

PM25-FIL 78.3054

PM-CON 992.1754

PT 2041.6552

SO2 4194.6428

VOC 172.4443

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EMISSION INVENTORY DETAIL
DEQ Air Resources Management Bureau
Year of Emissions: 2025

Print Date: 2/16/2026

Point Number: 3

Point Name: COLSTRIP UNIT #3 - POWER BOILER

Segment Description	SCC	Annual Process Rate Rate Units	Emission Factor Factor Units	Calc Method	Control Efficiency	Emission Factor Source	Tons Pollutant
SUB-BITUMINOUS COAL	10100226	2,409,735 Ton	0.06 lb/Ton	C		AP-42	72.2920 VOC
		2,409,735 Ton	0.5 lb/Ton	C		AP-42	602.4338 CO
		2,409,735 Ton	2.256 lb/Ton	C		CEM	2718.181 NO2 1
		2,409,735 Ton	0.3454 lb/Ton	C		AP-42	416.1612 PM-CON
		2,409,735 Ton	0.00056 lb/Ton	U	90	FIRE	0.0675 NH3
		2,409,735 Ton	8.5E-05 lb/Ton	C		FIRE	0.1024 PB
		2,409,735 Ton	20.562 lb/Ton	U	99.5	AP-42	123.8724 PM10-FIL
		2,409,735 Ton	0.708 lb/Ton	C		STD	853.0462 PT
		2,409,735 Ton	1.4704 lb/Ton	C		CEM	1771.637 SO2 2
		2,409,735 Ton	5.364 lb/Ton	U	99.5	AP-42	32.3145 PM25-FIL
DISTILLATE FUEL OIL	10300501	501 1000 Gallons	1.3 lbs/1000 Gallons	U	99.5	FIRE	0.0016 PM-CON
		501 1000 Gallons	1 lbs/1000 Gallons	U	99.5	FIRE	0.0013 PM10-FIL
		501 1000 Gallons	2 lbs/1000 Gallons	U	99.5	FIRE	0.0025 PT
		501 1000 Gallons	5 lbs/1000 Gallons	C		FIRE	1.2525 CO
		501 1000 Gallons	0.25 lbs/1000 Gallons	U	99.5	FIRE	0.0003 PM25-FIL
		501 1000 Gallons	0.2 lbs/1000 Gallons	C		FIRE	0.0501 VOC

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EMISSION INVENTORY DETAIL
DEQ Air Resources Management Bureau
Year of Emissions: 2025

Print Date: 2/16/2026

Point Number: 4

Point Name: COLSTRIP UNIT #4 - POWER BOILER

Segment Description	SCC	Annual Process Process Rate Rate Units	Emission Factor Factor Units	Emission Factor Units	Calc Method	Control Efficiency	Emission Factor Source	Tons Pollutant
SUB-BITUMINOUS COAL	10100226	3,335,305 Ton	2.3923 lb/Ton		C		CEM	3989.525 NO2 1
		3,335,305 Ton	0.00056 lb/Ton		U	90	FIRE	0.0934 NH3
		3,335,305 Ton	0.7123 lb/Ton		C		STD	1187.868 PT 9
		3,335,305 Ton	8.5E-05 lb/Ton		C		FIRE	0.1418 PB
		3,335,305 Ton	0.5 lb/Ton		C		AP-42	833.8262 CO
		3,335,305 Ton	5.364 lb/Ton		U	99.5	AP-42	44.7264 PM25-FIL
		3,335,305 Ton	20.562 lb/Ton		U	99.5	AP-42	171.4514 PM10-FIL
		3,335,305 Ton	1.4528 lb/Ton		C		CEM	2422.765 SO2 6
		3,335,305 Ton	0.06 lb/Ton		C		AP-42	100.0592 VOC
		3,335,305 Ton	0.3454 lb/Ton		C		AP-42	576.0072 PM-CON
DISTILLATE FUEL OIL	10300501	382 1000 Gallons	0.2 lbs/1000 Gallons		C		FIRE	0.0382 VOC
		382 1000 Gallons	0.25 lbs/1000 Gallons		U	99.5	FIRE	0.0002 PM25-FIL
		382 1000 Gallons	5 lbs/1000 Gallons		C		FIRE	0.9550 CO
		382 1000 Gallons	2 lbs/1000 Gallons		U	99.5	FIRE	0.0019 PT
		382 1000 Gallons	1.3 lbs/1000 Gallons		U	99.5	FIRE	0.0012 PM-CON
		382 1000 Gallons	1 lbs/1000 Gallons		U	99.5	FIRE	0.0010 PM10-FIL

2025 Units 3&4 Estimated Uncontrolled PM & SO ₂ Emissions									
Unit	Coal				Op Hrs.	PM		SO ₂	
	%Ash	%S	EF ³	Burned (tons)		Tons ¹	lbs./Hr. ²	Tons ⁴	lbs./Hr. ⁵
3	8.94	0.68	25.84	2,409,735	6,285.45	215,430	68,549	31,134	9,907
4	8.94	0.68	25.84	3,335,305	8,164.20	298,176	73,045	43,092	10,556
Total				5,745,040	14,449.65	513,607	141,594	74,226	20,463

¹ PM Tons = (%Ash/100)*Coal Burned

² PM lbs./Hr. = [Tons PM*(2000 lbs./Ton)] / (Op Hrs.)

³ Emission Factor (EF) from AP-42, Table 1.1-3 = 38S lbs./Ton coal

⁴ Tons SO₂ = (EF * Coal Burned) / (2000 lbs. /Ton)

⁵ SO₂ lbs./Hr. = (Tons SO₂* 2000 lbs/T) / Op Hrs.

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Addendum D-11
A. Unit 3 NOx, SO2, CO2 Monitor Replacements
Photos



CEMS Analyzers

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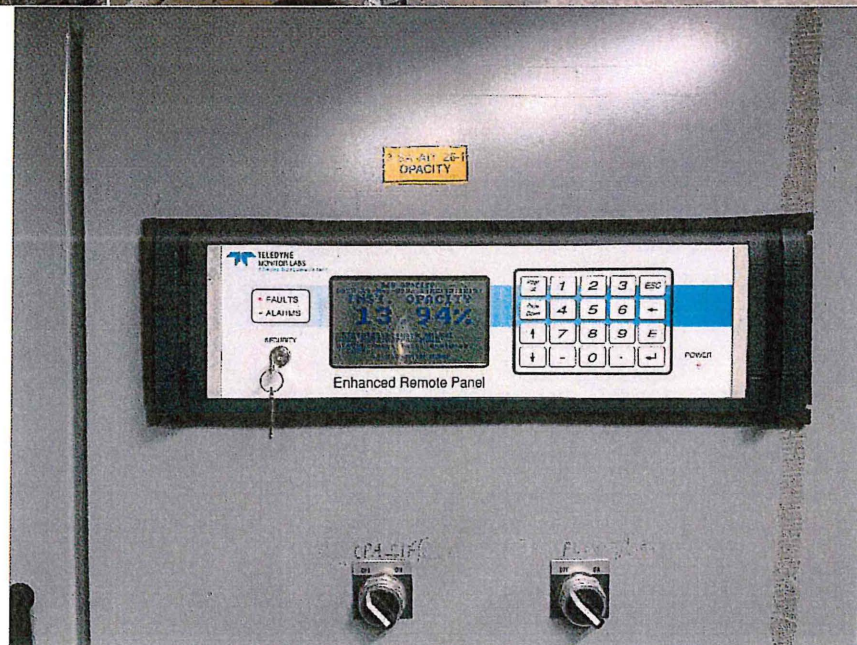
Addendum D-11
A. Unit 3 NOx, SO2, CO2 Monitor Replacements
Photos



CEMS Analyzers

Colstrip Steam Electric Station
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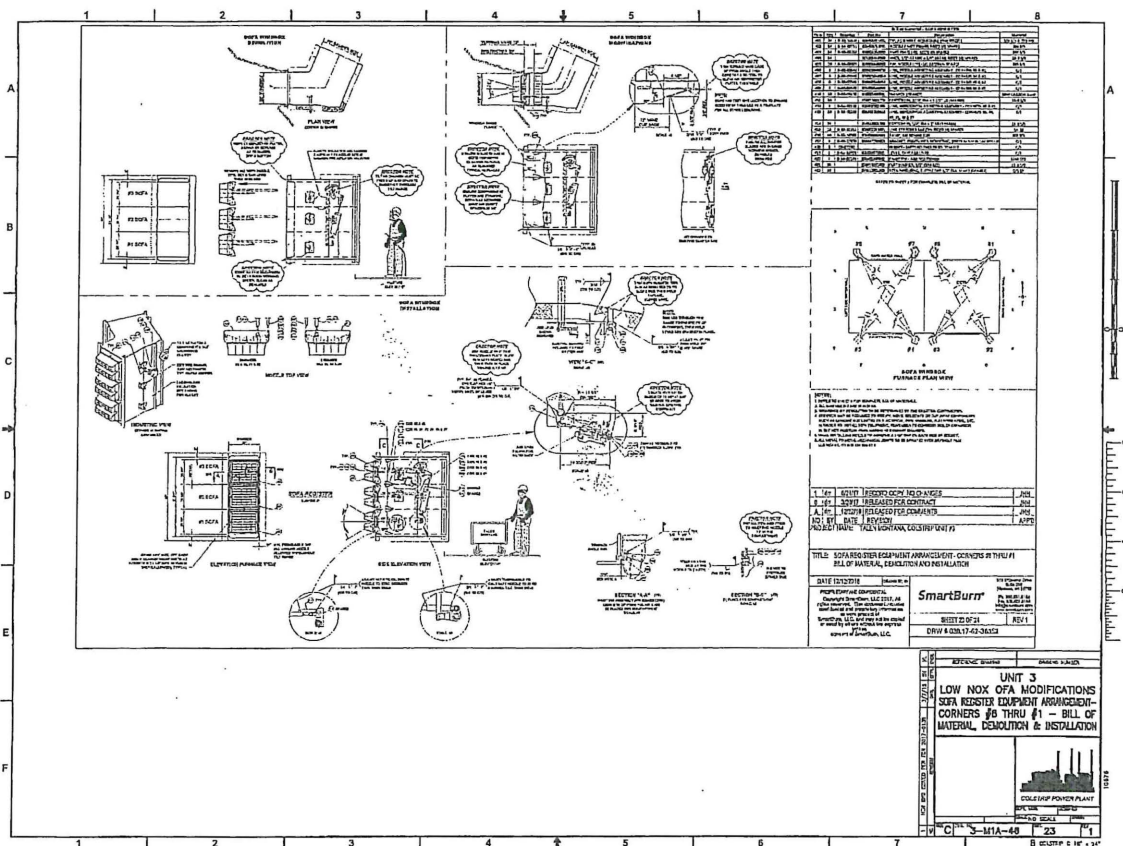
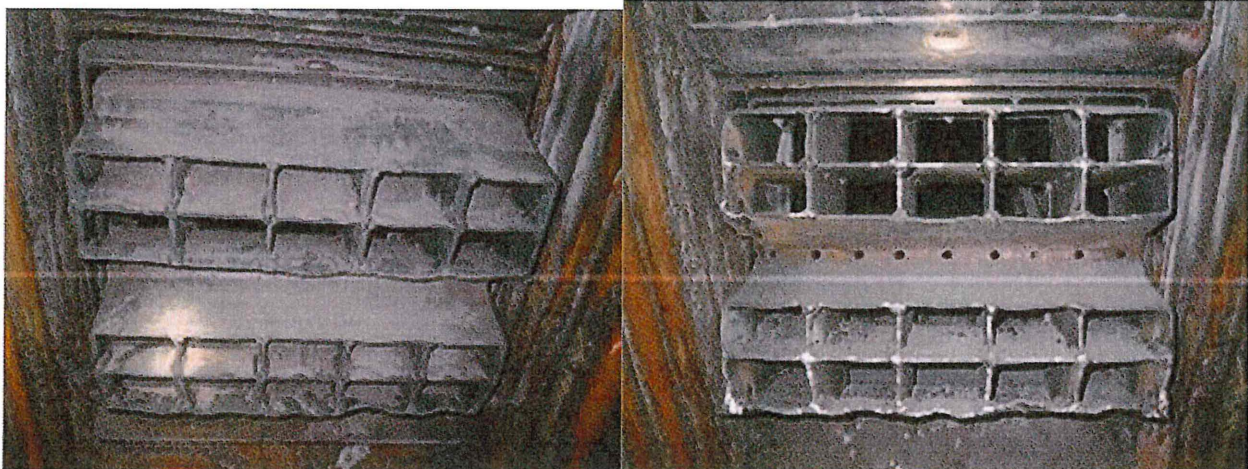
Addendum D-11
B. Unit 3 Opacity Monitor Replacement
Photos



Opacity Analyzer

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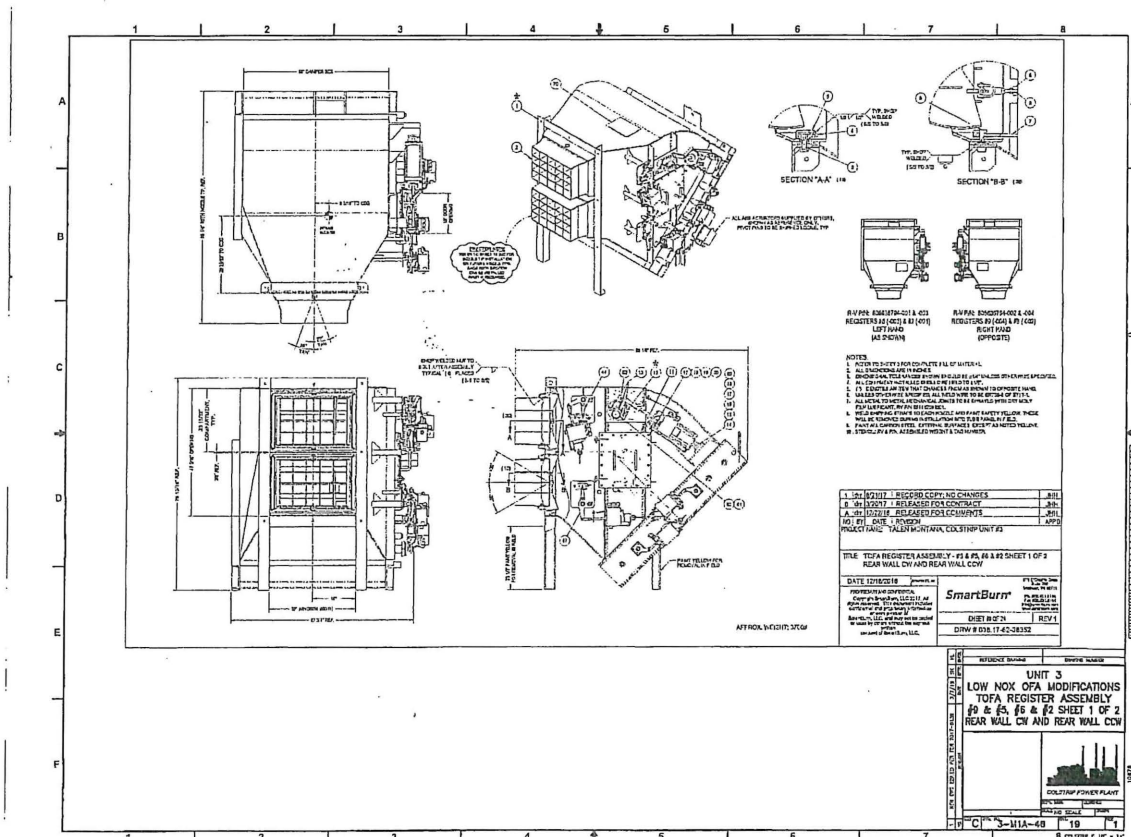
Addendum D-11
C. Separate Over Fire Air Bucket Replacement – Unit 3



SOFA Photographs and Schematic

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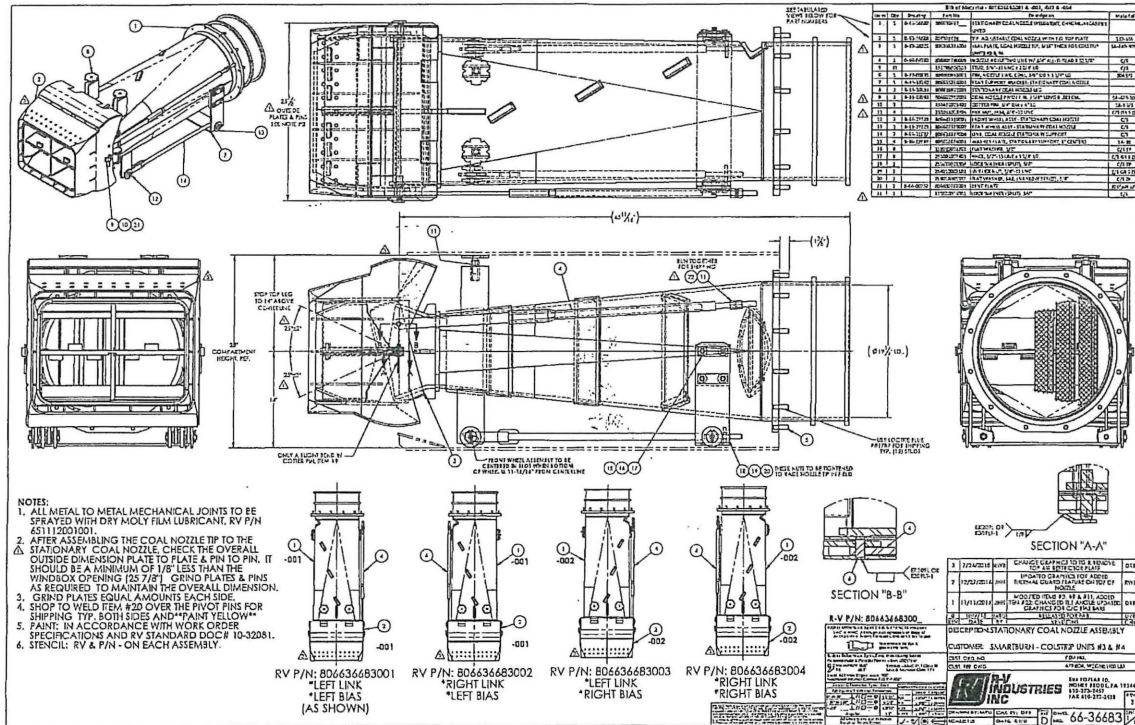
Addendum D-11
D. Top Over Fire Air Bucket Replacement – Unit 3



TOFA Photographs and Schematic

Colstrip Steam Electric Station
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Addendum D-11
E. Boiler Bucket Burner and Aux Air Replacement – Unit 3



Boiler Bucket Burner and Aux Air Photographs and Schematic